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II. Executive Summary



II. Executive Summary

At the request of the Town of Southbury, TLBA visited the Edgewood Bath and Tennis Club on June 10, 2020 to review the conditions of the swimming pool & pool decks as well as the recirculation, filtration and chemical control systems. Present at the site visit were George Bertram (Southbury Selectman), Hugh Sullivan, AIA (Bennett Sullivan Associates, Inc.) William Drakeley (Drakeley Pools), Susan Jones (Edgewood Bath and Tennis Club) and Michael Fortuna, AIA (TLB Architecture).

The swimming pool was built and opened in 2010. The pool is L-shaped, with a 6-lane, 25yard lap pool and a zero-depth entry area with multiple spray features. The pool is a pneumatically placed concrete with a stainless steel perimeter gutter system. Pool finish is a marbleized plaster, with ceramic tile at the zero-depth entry area.

This report records observations made, as well as recommendations. It should be noted that the operations of municipally owned public pool, as opposed to those of a private club pool vary, not by Code, but as a practical matter with regard to public access and safety and some of the recommendations are based on that operational reality. The ADA requirements of a municipal facility, and those of a private club also vary and an ADA compliant lift chair is recommended to meet the requirements.

Generally the Swimming Pool and related systems are well constructed and well maintained. Based on our observations there were no concerns that were not easily addressed or that would, in our opinion, raise concerns with regard to purchasing the property. Many of the recommendations are related to routine or deferred maintenance and are noted to assist the Town in forecasting expenses over the next 5-7 years.

This report is limited to the pool, decks and related systems and did not evaluate the building, locker rooms or other amenities. It should also be noted that the review was done while the pool was filled and operating so that system operation and condition could be reviewed. This precluded a review of the pool finish and review structural integrity of the concrete pool shell or assessment of buried piping. However, there were no visible signs of distress, deterioration or damage.

Based on observations made, a review of the Department of Health Approvals and associated drawings provided by Mr. Drakeley, TLBA believes the pool to be Code-compliant and viable for the foreseeable future.



Existing Conditions Analysis: Page1

A. SWIMMING POOL:

The swimming pool is pneumatically placed reinforced concrete. It is a monolithic placement with an integral haunch at the top of wall to form a concrete shelf, onto which the stainless steel gutter is installed. Wall and floor thickness is generally 8". Soils below and behind the wall are unknown. The pool finish is marbleized white plaster, with ceramic tile at the zero-depth entry. Ceramic tile is also used for lane lines and wall targets, as well as the warning marking at the 5-foot depth transition.

Pool depth ranges from 0-depth to 4-feet deep in the shallow leg and 4-feet to 9-feet in the lap pool. The 9-foot depth provides sufficient depth for competitive diving off of starting platforms, but would preclude the installation of a diving board.

The stainless steel gutter is a continuous overflow gutter, with 5-inch freeboard (water level to deck level) and an integral filtered water return channel. Corners are a radiused profile. Grate is PVC bar grate.

Observations and Recommendations:

- 1. There is a report of a surface crack within the pool. While it is likely original to the pool construction, typically due to shrinkage, it would be advisable to evaluate it the next time the pool is drained for maintenance to determine if injecting the crack is necessary.
- 2. The vinyl decal depth markings on the face of the gutter backsplash are faded and peeling. They should be replaced.
- 3. Maintenance items anticipated in the next 5-7 years include plaster resurfacing, sealant replacement and re-grouting of the tile. All of these items are typical maintenance items, and not indicative of any issues with the current condition.
- 4. An ADA compliant lift chair should be provided for public use.



Left: Typical stainless steel gutter

Right: Vertical depth markings on stainless steel in need of replacement.



Existing Conditions Analysis: Page2

B. POOL DECKS:

The swimming pool decks are concrete with a broom finish. Deck drainage includes a combination of sheet flow to grade and trench drains. While not surveyed, decks appear adequately pitched and there were no signs of stains due to standing or ponded water. A portion of the deck is an elevated structural slab, forming the roof of the Filter Room.

The decks include a number of expansion and control joints, however several cracks were present, and a few areas had spalling with the beginning signs of concrete degradation.

Observations and Recommendations:

- 1. Repair cracks by injecting an appropriate sealing material.
- 2. Repair spalls by chipping loose material and patching with a cementitious repair product.
- 3. Replace all elastomeric sealants in the deck expansion joints.



Above: Cracked concrete at edge of deck (near surge tank). If not repaired it will eventually break off.

Below: Spalling concrete near ladder anchor.





Above: typical deck crack.

C. SURGE TANK:

The surge tank is cast-in-place concrete and is constructed as an extension of the Filter Room building. It is adequately sized and all components seem to be operating properly. The main pool recirculation pump, as well as the spray feature pumps all draw water independently form this tank. Make-up water is introduced into the tank by a fill spout, connected to an automatic water level controller. Water discharges through an air-gap above an open-grate top. Adjacent to the tank is a manhole with the drain valve. This valve pit has an open top and is several feet deep.

Observations and Recommendations:

- 1. We recommend that the valve pit have a permanent locking top installed to prevent a child from falling in.
- 2. We recommend that the entire surge tank area be fenced in to prevent unauthorized access to the pit, grating, fill or electrical components.



Existing Conditions Analysis: Page4

D. RECIRCULATION, FILTRATION and CHEMICAL CONTROL SYSTEMS:

The swimming pool systems include high-rate sand filtration and an automatic erosion feed chlorinator for disinfectant. pH is controlled by means of a CO2 feed system with a single cylinder, located within the Filter Room. The pool contains 168,285 gallons and operates at 488 GPM, resulting in a turnover rate of 5.7 hours, well within Department of Public Health (DPH) regulations and consistent with DPH approvals.

The system was fully operational at the time of the visit and was operating within the parameters of the design and Health Department approvals. There were no apparent leaks in the main pool system and there were no signs of excessive air in the system (gurgling or pipe hammer). The floor near the pump feeding the Water Wiggle feature was wet. There did not appear to be any active leaks and this may have been a result of a recent strainer cleaning. This should be monitored to ensure the system is not leaking.

The pool is heated by means of a gas-fired pool heater, located outside the Filter Room. These appear new and could provide an extended season.

All piping and equipment was neatly installed and well maintained with adequate access for service and maintenance.

The Department of Health Approval is attached as Appendix A, which provides a detailed listing of installed equipment.

Observations and Recommendations:

- 1. The main drain covers have an expiration date for VGB compliance. The date should be verified, and covers replaced when required.
- 2. A number of flange bolts are rusted. It is recommended that bolts be replaced with stainless steel and that gaskets be replaced as a routine maintenance items when bolts are replaced.
- 3. The CO2 system should be in a ventilated enclosure.
- 4. Chemicals should be stored in a fire-rated enclosure.
- 5. It is recommended that the heaters be enclosed with a fence to prevent unauthorized access to the equipment.

Equipment photos begin on the next page.





Four pumps at back wall draw water from surge tank (located on other side of back wall) and feed water to spray features in

the zero-depth area of the pool.

Existing Conditions Analysis: Page6

High-rate Sand Filter with main recirculation pump in the foreground.

Note pipes off of the top of the horizontal pipe are the supply and return heater pipes to/from the heater located outside on the other side of the wall.



1000 gallon Backwash Holding Tank, with pumped discharge to sanitary sewer.



Rusted flange bolts.

Existing Conditions Analysis: Page7

Calcium hypochlorite erosion feeder for disinfectant



CO2 Feed system and Automatic Chemical Controller

Existing Conditions Analysis: Page8



Existing Conditions Analysis: Page9

V. Appendix A



Appendix A: Health Department Approvals and Drawings:



STATE OF CONNECTICUT DEPARTMENT OF PUBLIC HEALTH Environmental Health Section

May 28, 2010

Susan Jones Edgewood Bath & Tennis Club 201 Coachman's Road Southbury, CT 06488

RE: Conformance Inspection of the Outdoor Swimming Pool Located at Edgewood Bath & Tennis Club, North Benson Rd., Middlebury, CT

Dear Ms. Jones:

On May 25, 2010, I inspected the recently constructed outdoor swimming pool located at the subject facility. Plans and specifications for this pool were approved on April 22, 2009.

This inspection was performed in order to evaluate conformance with the approved plans and specifications. The pool had not been opened for use at the time of inspection, but had been filled with water.

Persons present during the inspection:

- 1. Susan Jones, Edgewood Bath & Tennis Club
- 2. William Drakeley, Drakeley Swimming Pools
- 3. Tom O'Loskey, Middlebury Health Department

Observations

As a result of this inspection, the pool is determined to be in compliance with all items indicated on the plans and specifications approved by this department. Please see an <u>updated</u> summary specification sheets attached to this letters. All new items listed on this summary specification sheets are in compliance with the standards of this office and are therefore accepted and approved.

Phone: (860) 509-7296, Fax: (860) 509-7295 Telephone Device for the Deaf (860) 509-7191 410 Capitol Avenue - MS #51REC P.O. Box 340308 Hartford, CT 06134 An Equal Opportunity Employer The pool shall be operated and maintained as required by Section 19-13-B33b of the Public Health Code.

If you have any questions, please contact me at 860-509-7296.

Sincerely, Δ Pamela E. Scully

Sanitary Engineer III Recreation Program Environmental Health Section

cc: Director of Health – Middlebury Building Official – Middlebury Sanitarian – Middlebury Drakeley Swimming Pools, 74 Hickory Lane, Bethlehem, CT 06751 Pool File

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<u>MAY 28, 2010</u>

SUBJECT:MIDDLEBURY, CT: EXAMINATION OF PLANS AND SPECIFICATIONS FOR A
PROPOSED PUBLIC SWIMMING POOL WITH FOUR SPRAY FEATURES IN A ZERO
DEPTH ENTRY AREA TO BE LOCATED AT EDGEWOOD BATH & TENNIS CLUB

FROM: Pamela E. Scully Sanitary Engineer 3 Recreation Program Environmental Health Section

LOCATION: North Benson Road, Middlebury

ENGINEER OR ARCHITECT: Edward Fenn Jr., PE Lic # 21743

POOL CONSTRUCTION FIRM: Drakeley Pool Company, 74 Hickory Lane, Bethlehem, CT

APPLICANT: Susan Jones, Edgewood Bath & Tennis Club, 201 Coachman's Road, Southbury, CT

PROPOSED CONSTRUCTION: Outdoor swimming pool with spray features; "L" shaped; to be constructed out of steel reinforced pneumatically placed concrete and provided with high rate sand filtration and automatic erosion feed chlorination equipment.

WATER SUPPLY: Municipal

RECOMMENDED MAXIMUM BATHING LOAD: $4914 \text{ Ft}^2 = 196 \text{ Bathers}$ 25 Ft²

PLAN DIMENSIONS & CAPACITY: 48 Ft x 32 Ft and 75 Ft x 45 Ft; 4914 Ft²; 168,258 Gallons

SLOPE OF BOTTOM IN ZERO DEPTH ENTRY AREA: 0 Feet to 4 Feet Water Depth in 48 Feet; Linear = 1:12

LEVEL AREA: 4 Feet Water Depth Level Area for an area of 45 Feet x 32 Feet

SLOPE OF BOTTOM IN SHALLOW AREA: 4 Feet to 5 Feet Water Depth in 15 Feet; Linear = 1:15

SLOPE OF BOTTOM 5 FEET TO MAXIMUM DEPTH: 5 Feet to 9 Feet Water Depth in 12 Feet; Linear = 1:3

VERTICAL WALLS (Deep End): Vertical for 5 Feet Water Depth than Curved to Bottom with a Radius = 4 Feet.

STARTING BLOCKS: (6) Paddock Model # 4909; Removable.

DIVING BOARD: None

EFFECTIVE DEPTH AT DIVING AREA: No diving plans submitted or approved.

MINIMUM HEIGHT OF CEILING ABOVE DIVING BOARD: N/A

RECIRCULATING INLETS: Integral with perimeter overflow gutter system

OUTLETS/MAIN DRAINS: (2) Paddock 24 Inch x 24 Inch; 8 Inch pipe; Rated for 686 GPM @ 1.5 FPS each; ASME/ANSI A112.19.8 2007 Standard complaint

OVERFLOWS/SURFACE SKIMMERS: Paddock Model # R300 stainless steel perimeter overflow gutter system with (6) Paddock Model # 9215 automatic surge weirs; 8 Inch converter pipe to surge tank.

SUCTION CLEANER: Portable Pentair Model # 3180 - E Pump with vacuum cleaner

CIRCULATING PUMP: (1) Pentair Model # EQK - 750; 7.5 H.P.; Rated at 488 GPM at 63 Feet TDH

TIME FOR POOL TURNOVER:168,285 Gallons= 5.7 Hours488 GPM X 60 Min./Hr.

FEATURE SYSTEM: Four spray features are provided in the zero depth entry area. Each feature has a dedicated pump that draws water directly from the surge tank.

(A) ARC Water Bucket Cluster - 40 - 60 GPM; with (1) Pentair Whisperflo Model # WF-3; ³/₄ H.P. pump

(B) ARC Water Wiggle - 15-25 GPM; with (1) Pentair Whisperflo Model # WF-3; 3/4 H.P. pump

(C) ARC Stream Jet Manifold - 35 - 70 GPM; with (1) Pentair Whisperflo Model # WF-3; ³/₄ H.P. pump

(D) ARC Water Cup - 200 - 400 GPM; with (1) Pentair Model # EQ500; 5 H.P. pump

FLOW GAUGE: (1) Blue - White Model # F306; 6 Inch pipe, Scale: 250 - 1050 Gallons

HAIR CATCHER: Integral with pump

FILTER: (1) Paddock Model # 6725 - H - 1C horizontal high rated sand filter; NSF Listed

FILTER AREA: 39.15 Ft²

FILTRATION RATE: 12.5 GPM/Ft² When Operating at 488 GPM

BALANCE/SURGE TANK: 12 Ft x 12 Ft x 12 Ft; Usable Volume = 5385 Gallons

SIGHT GLASS: (1) Paddock 11/2 Inch site glass.

MAKE-UP WATER/PLACE OF INTRODUCTION: Via 1¹/₂ Inch fill spout to discharge into surge tank with a minimum 6 Inch air gap; with Paddock Model # 6610 automatic water level control system.

CHLORINATOR: (1) Accu - Tab System - Model # 3070 AT; Capacity = 70 lbs/day

CHEMICAL FEED: (1) Pur-Aqua Model # PA - 004A carbon dioxide feed system for pH adjustment

TESTING EQUIPMENT: (1) Paddock Model # 2814 Test Kit with DPD reagent for free and total chlorine analysis and pH.

UNDERWATER LIGHTS: (8) Amerlite Model # 78454100; 500 watts each

SHOWERS &	& TOILETS:			
MALE:	2 Toilets,	2 Urinals,	2 Lavatory Sinks,	4 Showers
FEMALE:	5 Toilets,	3 Lavatory Sinks,	4 Showers	

BATHER ROUTING & FENCING: Chain line fence to provide minimum 4 Foot high enclosure around entire pool periphery. Bather access through self-closing, self-latching gate.

DECK AND DECK DRAINS: Concrete deck, broom finish, minimum 5 Feet wide around entire pool periphery; deck sloped towards deck trench drainage system or surface of ground.

TOILET AND SHOWER WASTE DISPOSAL: To Sanitary Sewer

FILTER BACKWASH WATER DISPOSAL: To Sanitary Sewer; via 6 Inch backwash discharge line to 1000 gallon holding tank; 6 Inch minimum air gap provided at point of discharge. Pumped to sewer system.

DRY WELL SIZE AND CAPACITY: None

POOL DRAINAGE: To Sanitary Sewer; via backwash discharge line with air gap.

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			DATE	REV		REVISION DESCRIPTION	
IT .			11.7.08 7.30.09	1		DELETE SPRAY PAD ADD LIGHTS & SURGE TANK SECTION CHANGED EQUIPMENT ROOM LAYOUT AND SURGE TANK AREA	
			MAIN	N PE	JOL EQU	JIPMENTI	
			PERI	METEI QTY.	R UVERFL	DW AND RECIRCULATION SYSTEM DESCRIPTION	
			1 1A 1B	±289' ±30' ±10'	R300 R300 R300	STRAIGHT R300, 5" D.T.R. RECIRCULATING SYSTEM, 304 ST.ST. STRAIGHT R300, 0" D.T.R. RECIRCULATING SYSTEM, 304 ST.ST. CURVED R300, 5" D.T.R. RECIRCULATING SYSTEM, 304 ST.ST.	
۲ſ	~ K		1C 2 3	±3' 6 8	R300 9215 9018-SL	UURVED KOUL, U" D.T.R. RECIRCULATING SYSTEM, 304 ST.ST. AUTOMATIC INTEGRAL FLOW SURGE WEIR JET FLOW GUTTER WASH FITTING	
			4	5	8818-55	18" X 18" SS MAIN DRAIN BOX W/PVC GRATE	
			6 FILT	2 RATIE	8703-S IN EQUIPM	COMMERCIAL HYDROSTATIC RELIEF VALVE	
			N[]. 7A	QTY.	CAT. NI. 6725-H-1C	DESCRIPTION 48'# × 108' SIDESHELL, 39.15 SQ. FT. ST. ST. HORIZONTAL PRESSURE SAND FILTER WITH WAFER VALVE CONTROL PENTATE	
					-9-55 EQK-750	SELF-PRIMING PUMP & MOTOR W/EXTRA BASKET, MODEL EQK-75 7.5 H.P., RATED FOR 488 GPM @ 63'TDH, 208-230/460V, 3 PHASE 60 CYCLE, 3450 RPM	
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			11U. 8 9	1 1	3075	PPG CHLORINATOR	
			10 11 11A	1	PA-004A PC-2000	CUZ FEEDER W/ 2-TANK HOOK-UP & AUTO SWITCHOVER CHEMTROL WATER CHEMISTRY CONTROLLER WITH FLOW CELL	
			12 MAIN	1 TENAI	2814 NCE EQUI	COMMERCIAL TEST SET DPD FREE CHLORINE TYPE	
			ND. 13	QTY. 1	CAT. NI. 3163		
			14	1	3330 3330	VALL BRUSH & HOLDER	
/ !!			16 17 17		3348 3367	TELESCOPIC HANDLE	
	> IMIT NC			QTY,	CAT. ND. 4541	DESCRIPTION ST. ST. 4-TREAD LADDER	
	DECK CONTR.		19 20 21	8 2	4540	ST. ST. ST. ESCHITCHEINS	
ч Ч	CONT. CONS & SEALANT	RUCTION JOINT BY G.C.	22 23	8	4801	BREINZE WEDGE DECK ANCHERS	
-		ÇK 1/4" PER FT 11 POOL	SAFE	TY E	QUIPMENT		
Í	/ <u>/ II</u> DRAIN		ND. 25 _26	QTY. 2 2	CAT, ND, 4712 4723	DESCRIPTION STAINLESS STEEL OBSERVATION PLATFORM LIFE HOOK V/ 16' POLE	
	₽		27 28 29	2 80' 4	4726 4747 4774	24" LIFE RING BUDY W/ CANVAS COVER & 60' -3/16" ROPE 3/4" POLYETHELENE ROPE 3/4" ROPE HOUK TERMINAL	
			30 31	4	9026	RECESSED STAINLESS STEEL LIFELINE ANCHOR 5' × 9' LIFELINE FLOAT	
		FENER CHANNEL		NG EC	QUIPMENT		
	MIN, 30 ADMIX PER DR	0/0# GROUT WITH RECOMMENDED UF .33% SIKA INTRAPLAST 'N' RY WEIGHT OF CEMENT	ND. 33 34	QTY. 6 7	CAT. ND. 4909 200-330000	DESCRIPTION E-Z SET TWO STARTING PLATFORM WITH ANCHORS WAVE QUELLING RACING LINES FOR 75 FT. COURSE	
		STOP MATERIAL, CONT.	35 36 37	14	9026	RECESSED STAINLESS STEEL RACING LINE ANCHOR	
•	1 1/2" ST, ST, 1'-0"	X 1 1/2" X 3/16" X 15" LG. ANCHUR ANGLE KUM CURNERS & Ø 4'-0" DC	38 MISCI			UIPMENT	
<u> </u>			ND. 39	QTY.	CAT, ND, 6610	DESCRIPTION AUTOMATIC WATER LEVEL CONTROLLER	
	(2) REI 1'-0'-F	ARS-NOT BY P.P.E.C OM CORNERS ALCHENTIRF PERM	40 41 42	1	-	6" BLUE & WHITE FLOWMETER 1 1/2" BACKWASH SIGHT GLASS ECONDLIFT PIEL MANUAL HANDICAP_LIFT	
1			43 44	- 8	- 78454100	AMERLITE 500 WATT, 120V, UNDERWATER LIGHT W/ ST.ST. NICHE	
			45		-		
			46		-		
			48 49	- ±34'		RAISED GRATE @ ZERO DEPTH ENTRY	
			50 51 52	1 1 1	PPFV-10 AVP-10 -	PADDUCK 10" MUDULATING PIVUTING ARM FLUAT VALVE PADDUCK 10" ST. ST. ANTIVURTEX PLATE ST. ST. VALVE OPERATOR EXTENSION FOR 10" SHUTOFF VALVE	
AL	ANT, CUNT.		POOL		ESI		
CERAMIC TILE DEPTH MARKERS @ 25' D.C. MAX, 2' DEPTH INCREMENTS, MIN		DEPTH ' D.C. MAX. 'EMENTS, MIN.	1 POOL PERIMETER = 332'-5 3/8' 2 POOL AREA = 4,914 SQ.FT. 3 POOL CAPACITY = 168,285 GALS				
		1/4" DRAIN	4 5 6	POD FIL FIL	IL FLOW RAT TER AREA = TER RATE PE	L FUR 5.75 HR. TURNEIVER = 488 GPM 39.15 SQ.FT. CR SQ.FT DF FILTER AREA = 12.46 GPM/SQ.FT.	
			7	BAT	HER LOAD=	196 PERSONS MAX.	
	. <u>.</u>					CATALOG NCI. 6725-H-1C-9-SS	
	- SS STIFFENER C	HANNEL.	1. 4				
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		WILLIAM T. DRAKELEY 248 MAIN STREET SOUTH	SWIM PHON	MING E: (203	POOL COM 3) 263-7919	PANY, L.L.C. PADDOCK POOL EQUIPMENT CO., INC. 555 PADDOCK PARKWAY PHONE: (803) 324-	
		WOODBURY CT 06798	FAX:	(203)	203-7921	ROCK HILL SC 29730 FAX: (803) 324-11	

